REMARKS

Summary of Examiner Interviews

Applicant thanks Examiner Aditya S. Bhat for the telephonic interview conducted on August 12, 2009. Applicant was represented by Mr. Jeffrey J. Barclay (Reg. No. 48,950) and Mr. Indranil Sarkar.

The Examiner and Applicant's representatives discussed the 112 rejection of claim 1 and also the Govari and Ashe references with respect to the pending claims.

Applicant also thanks the Examiner for the second telephonic interview conducted on October 8, 2009. Applicant was represented by Mr. Jeffrey J. Barclay (Reg. No. 48,950) and Mr. Indranil Sarkar.

The Examiner and Applicant's representatives discussed possible claim amendments. The foregoing amendments and following remarks are in accordance with the discussions held with the Examiner.

Favorable reconsideration is respectfully requested in view of the following comments, which are preceded by related comments of the Examiner in small bold type:

35 U.S.C. § 112

> **Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**
> **Specifically, it is not clear what position is being adjusted. Is applicant referring to the position of an object, the signal, etc?**

Applicant disagrees and contends that claim 1 clearly recites adjusting the position indication *signal* and not the position of the object itself: "*adjusting the position indication signal of the at least one sensor based on the disturbed amplitude and phase…*."

Further, based upon the telephonic interviews conducted on August 12, 2009 and October 8, 2009, Applicant has amended claim 1 to further clarify that the first and second position indication signals are "*provided by at least one sensor.*" Applicant's specification describes a sensor signal to include an amplitude and a phase. The undisturbed phase is described to be a function of sensor position and hence a sensor signal with an undisturbed phase is a position indication signal. Support for the foregoing amendment may be found at least in the following portions of Applicant's specification:

> Given that A_T and ϕ_T are the total amplitude and phase of a sensor signal, and given that ϕ_U is a quantity that can be determined at the time of characterization of a system, the undisturbed amplitude (i.e. corrected) A_U can be determined.[1]
>
> The undisturbed phase, however, can be a function of sensor position and orientation (pose).[2]

35 U.S.C. § 103

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application Publication No. EP 1203560A2 ("Govari") in view of U.S. Patent Application Publication No. 2003/0011359 ("Ashe"). The Examiner states:

> **With regards to claim 1, Govari teaches a distortion compensation method comprising:**
> **Determining, on a computing device an undisturbed phase for at least one of a first position indication signal and a second position indication signal; (Page 3, paragraph 0020)**
> **determining a disturbed amplitude and phase of the position indication signal; and adjusting a position indication based on the disturbed amplitude and phase, and the undisturbed phase, wherein the second frequency is different from the first frequency;(Page 7, paragraph 0051-0053)**
> **Govari does not appear to teach determining an undisturbed ratio that relates the amplitude.**
> **Ashe (USPUB 2003/0011359) teaches determining an undisturbed ratio that relates the amplitude. (page 6, paragraph 0061)**

[1] Applicant's Specification, Page 17, lines 11-14.
[2] *Id.*, Page 15, lines 19-21.

Applicant contends that Govari and Ashe, alone or in combination, fail to disclose or suggest "determining an undisturbed amplitude ratio that relates the amplitude of the first position indication signal at a first frequency to the amplitude of the second position indication signal at a second frequency" as recited in claim 1.

Govari is not understood to determine any parameter that relates amplitudes at two different frequencies. Rather, Govari determines a position signal component independently at different frequencies and then simply takes an average of the independently determined quantities to arrive at a final value. As such, single frequency operations are executed for the determination. In this regard, the Govari reference reads[3]:

> Thus, if M_i is measured at four known separate frequencies, equation (5c) can be solved for A_0, the position signal component. Most preferably, frequencies $\{\omega_1\}$, $\{\omega_2\}$ and $\{\omega_3\}$ in system 10 comprise more than four separate frequencies, so that a plurality of values of A_0 can be determined, and a final value of A_0 calculated by one of the processes of averaging known in the art.

As such, Govari does not determine an undisturbed amplitude ratio that relates the amplitude of the first position indication signal at a first frequency to the amplitude of the second position indication signal at a second frequency.

On page 3 of the current office action the Examiner appears to acknowledge that "**Govari does not appear to teach determining an undisturbed ratio that relates the amplitude**" and relies on Ashe (page 6, paragraph 0061) to allegedly disclose this feature.

Applicant asserts that Ashe, like Govari, does not disclose or suggest determining an undisturbed amplitude ratio relating amplitudes at two distinct frequencies. Rather, Ashe describes determining a ratio of field amplitudes at two different locations relative to a transmitter. In particular, with reference to Fig. 6 of Ashe (reproduced below), a ratio of magnetic field amplitudes is calculated from a magnetic field present at a location above a transmitter (defined as region 7) and a magnetic field adjacent (defined as region 8) or present at a location under (defined as region 9) the transmitter. As described by Ashe[4]:

> Accordingly, the ratio of the magnetic field amplitude in the operating region above the transmitter assembly over that of the regions adjacent to and

[3] Govari, paragraph [0054].
[4] Ashe, paragraph [0061].

> under the transmitter assembly may be used to predict sensitivity to metallic objects.

Thus, Ashe does not suggest, much less disclose, determining the ratio at two different frequencies. Rather Ashe appears to simply predict sensitivity to metallic objects in an operating region surrounding a transmitter. Further, Ashe describes determination of a single operating frequency and therefore teaches away from using two distinct frequencies in any measurement[5]:

> It is apparent that there is a relationship between material conductivity and frequency which is of use when determining the frequency of operation of the transmitter and also when selecting the required bulk resistivity of the permeable attenuator.

Claim 1 is therefore understood to be patentable over Govari and Ashe, taken either alone or in combination. Claims 2-17 are patentable for at least the reasons for which claim 1 is patentable.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

In view of the foregoing amendments and remarks, the Applicants respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

---

[5] *Id.*, paragraph [0069]

The fee in the amount of $130 for the Petition for Extension of Time is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account Authorization. Please apply any additional charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 07508-0055001.

Respectfully submitted,

Date: 20 October 2009

Jeffrey J. Barclay
Reg. No. 48,950

Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945